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## Metaphors as Models of Thinking

### Summary

Our cognitive ability to interpret the world around us is largely based on metaphor and metonymy. Both of them let us see relations between unknown and known, remote and near, invisible and visible, based essentially on similarity and contiguity between concepts. The atomists created such a similarity or analogy between visible Greek alphabetic script and the invisible world of atoms. Contemporaneous biologists continue to use this model of thinking in molecular biology. By various examples – from biblical interpretation to the world of science and technology – the pervasiveness of such models of thinking (and partially their time-bound character) is shown. In the past, a big problem was European mainstream thinking, insisting on relations between words instead of concepts in the case of metaphor.

Keywords: Metaphor; metonymy; concepts; cognition.

Unsere kognitive Fähigkeit, die Welt um uns zu interpretieren, beruht weitgehend auf Metapher und Metonymie. Beide erlauben es uns, ausgehend von den Prinzipien von Ähnlichkeit und Kontiguität zwischen Konzepten, Beziehungen zwischen Unbekanntem und Bekanntem, Entlegenem und Naheliegendem, Unsichtbarem und Sichtbarem zu sehen. Die Atomisten schufen solch eine Ähnlichkeit oder Analogie zwischen der sichtbaren griechischen Schrift und der unsichtbaren Welt der Atome. Zeitgenössische Biologen nutzen dieses Denkmodell weiterhin in Bezug auf molekulare Biologie. Durch vielfältige Beispiele von der Bibelexegese bis zur Welt der Naturwissenschaft und Technik wird die weite Verbreitung solcher Denkmodelle (und teilweise auch ihre Zeitgebundenheit) aufgezeigt. In der Vergangenheit bestand ein großes Problem in der Hauptströmung europäischen Denkens, die auf Beziehungen zwischen Wörtern statt zwischen Konzepten, wie im Fall der Metapher, beharrte.

Keywords: Metapher; Metonymie; Konzepte; Kognition.

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## I

Let me start with a citation from one of the Presocratics, Anaxagoras (c. 499 – c. 428 BC): ὁψις ἀδύλων τὰ φαινόμενα.<sup>1</sup> It can be translated as “the seeing of the invisible is mediated by what is visible [the phenomena]”. A famous article that the supervisor of my doctoral thesis published at age 27 attributes this citation to the activity of Anaxagoras as a physician, ‘the invisible’ being the illness and the ‘phenomena’ the symptoms of the condition to be diagnosed.<sup>2</sup> That there is another, somewhat different, in my eyes far more interesting interpretation, will become evident after a short detour into the history of linguistic thought.

## II

According to Quintilian (*Institutes of Oratory*), there exist a dozen so-called tropes. Petrus Ramus, under his French name Pierre de la Ramée (1515–1572), reduced them to four: metonymy, irony, metaphor and synecdoche.<sup>3</sup> Since metonymy and synecdoche can be taken together, synecdoche being a special case of metonymy (use of an element for the class or the class instead of the element); and since irony is somewhat different, given that speech is used in order to mean the contrary of what is being said, two basic tropes will remain: metaphor and metonymy.

These tropes are intimately linked with linguistic thought, the most famous example being perhaps Roman Jakobson with his metonymic and metaphoric poles of language, which have led to two basic types of aphasic disorder – similarity and contiguity disorder.<sup>4</sup> “Every form of aphasic disturbance consists in some impairment ... of the faculty either for selection and substitution [similarity, paradigmatic aspect] or for combination and contexture [contiguity, syntagmatic aspect]” (p. 254).

This intimate relationship was most clearly spelled out at the beginning of the 1920s, by a French author Jakobson doesn’t seem to be familiar with, Léonce Roudet (1861–1935). In 1921, Roudet published a groundbreaking (if largely unnoticed) article, “Sur la classification psychologique des changements sémantiques”,<sup>5</sup> showing that metaphor and metonymy underlie linguistic change. – Here are some of his thoroughly phenomenological considerations:

1 Diels and Kranz 1960, fragment 59B 21a.

2 Diller 1932. Reprinted in Diller 1971, 119–143.

3 Quintilianus troporum genera duodecim facit, metaphoram, synecdochen, metonymiam, antonomasiam, onomatopoeiam, catachresin, metalepsin, epitheton, allegoriam, periphrasim, hyperbaton, hyperbolem. At quatuor tantum sunt, metonymia,

ironia, metaphora, synecdoche. (1549: *Rhetoricae distinctiones in Quintilianum*, p. 79.)

4 “Two aspects of language and two types of aphasic disturbances”, first published in Jakobson 1956, 55–82 and reprinted in Jakobson 1971, 239–259.

5 Roudet 1921.

French text	English (my translation)
<p><i>Les idées et les mots forment dans la conscience de chaque individu deux systèmes distincts quoique solidaires. D'un côté les images de choses et les idées générales qui sont à l'état latent dans la conscience sont unies les unes aux autres par les liens multiples de l'association par contiguïté et de l'association par ressemblance. D'un autre côté les images verbales, dont l'ensemble constitue la langue, forment aussi un système bien lié. Il y a entre elles des rapports que Saussure a définis avec précision et qu'il a appelés des rapports syntagmatiques et des rapports associatifs.</i></p>	<p><i>Concepts and words constitute in the conscience of an individual two systems that are distinct, although solidly joint. On the one hand, the images of things and the general ideas that are in a latent state in the conscience are mutually linked by multiple relations of association by contiguity and association by similarity. On the other hand, the sum of verbal images that make up the language form a well-linked system, too. In between these images are relations Saussure has precisely defined, terming them syntagmatic and associative [since 1929, linguists have used paradigmatic in place of this latter term].</i></p>

The distinction between the level of concepts and the level of words, combined with the relations of contiguity and similarity, can be visualised in the following scheme:

	Contiguity	Similarity
Level of concepts	<p>Changements résultant d'une association par contiguïté entre les idées.</p> <p>metonymy</p>	<p>Changements résultant d'une association par ressemblance entre les idées.</p> <p>metaphor</p>
Level of words	<p>Changements résultant des rapports syntagmatiques entre les mots.</p> <p>ellipsis, condensation</p>	<p>Changements résultant des rapports associatifs entre les mots.</p> <p>folk etymologies, etc.</p>

The following citation shows the psychological processes at work:

French text (emphasis added)	English (my translation)
<p>On voit donc comment il faut considérer les changements sémantiques. Ils peuvent avoir des causes initiales extérieures à l'individu et d'ordre social, mais la cause immédiate de chaque changement est toujours un phénomène psychologique qui a son siège dans l'individu, à savoir <i>l'effort du sujet parlant pour exprimer sa pensée au moyen de la langue. Cet effort fait apparaître dans la conscience un système d'idées et un système de mots.</i> Si les deux systèmes sont en accord, l'effort aboutit simplement au rappel d'un mot; <i>mais souvent il y a disharmonie entre eux: l'effort d'expression cherche alors (p. 692) à les adapter l'un à l'autre.</i> Pour cela, <i>il fait glisser le système des mots sur le système des idées, ou au contraire, il fait glisser le système des idées sur le système des mots.</i> Dans un cas comme dans l'autre, il en résulte un changement du sens ou de la valeur d'un mot.</p>	<p>Thus we see how semantic change has to be considered. This change can start with causes that are exterior to the subject and of social order. But the immediate cause of any change is always a psychological phenomenon based in the individual, i.e., <i>the effort of the speaker to express his thoughts through language. This effort creates a system of concepts and a system of words in the conscience.</i> If the two systems are in accordance, the effort simply leads to the recall of a word; <i>but often there is no harmony between them: in this case, the effort of expression seeks (p. 692) to adapt them mutually. In order to do so, it slides the system of expressions over the system of concepts or, conversely, it slides the system of concepts over the system of expressions.</i> In both cases, the result will be a semantic change.</p>

There is one basic distinction behind these considerations: the distinction between words and the concepts they stand for. If we look for a linguistic sign model that meets these requirements, we will remain unsuccessful. Linguistic textbooks offer us a triadic model attributed to Charles Kay Ogden and Ivor Armstrong Richards, basically reflecting ideas of stoicism (Fig. 1).

Here we find an alternative at the apex of the triangle, “thought or reference”, which leaves the relation fundamentally ambiguous. Is it reference? Is it thought? Would ‘concept’ be a more adequate expression?

In order to do justice to the phenomena, we have to introduce a fourth corner, transforming a triangular model into a rectangle or a trapezium. The interesting fact is that, going back some centuries in history, we find an adequate, much more refined model (Fig. 2).<sup>6</sup>

6 I am indebted to Roman Jakobson as regards the discovery of this model. Speaking of the triangle of Ogden and Richards, he used to say that the model

was usable in simple contexts, but that there was, and now I remember his voice becoming grave, a far better model proposed by a group of thirteenth-

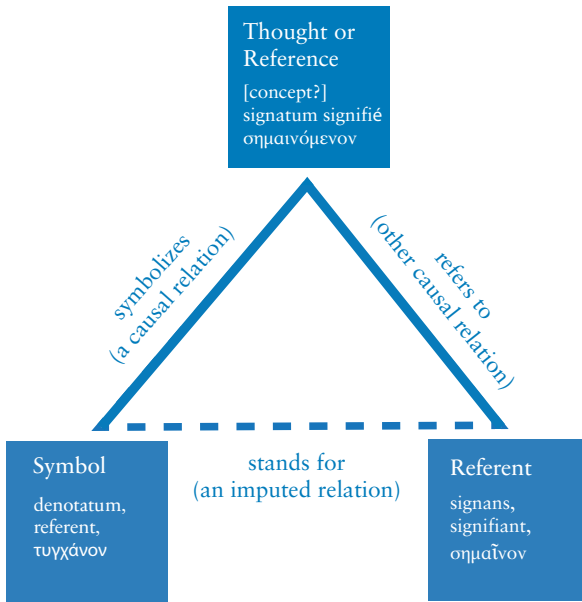


Fig. 1 (Stoic) sign model attributed to Charles K. Ogden and Ivor A. Richards 1923.

This model can be read as the psychological process involved in perceiving and naming something and, conversely, in uttering something that will be understood by others. First, I am confronted with an object, a matter of fact with certain properties (*modi essendi*). Then I conceive of it, a highly active process for phenomenology: I make a concept of it, classifying it as something I know (*modi intelligendi*). This happens beyond language or beyond a particular language. Only then is the concept I have formed (the *idée* in the wording of Roudet) transposed into a linguistic form, first of all a certain part of speech, thus relating to a certain (prototypical) *modus significandi*. Nouns are in principle endowed with the *modus esse*, verbs with the *modus fieri*, etc.

One of the examples of the schoolmen uses the pain I endure. It may be expressed as an exclamation (*aiaiai!*, *aua!*, *vae mihi misero!*), as a noun (*dolor*), as a verb (*dolet*). I can express it as well with an entire sentence, *Caput dolet vehementer*. Most importantly, since concepts transcend any particular language, I might as well say: *I have a terrible*

century schoolmen dubbed the Modists. In this context he mentioned the names of Boethius and Simon de Dacia (= Denmark), and perhaps also Siger of Brabant. This led me to a thorough study of these authors and my discovery of an evolution bordering on the miraculous in their comments on the Latin grammar of Donatus: a wholly uninspired enumeration of the parts of speech of Latin was transformed,

by their comments (scholasticism means commenting on extant texts), into a Universal Grammar, supplemented by a syntax (diasynthetic) totally lacking in the Latin author. The focus of their grammatical thinking is on exactly this sign model.

In this context, I refer to: Raible 1983 and Raible 1987.

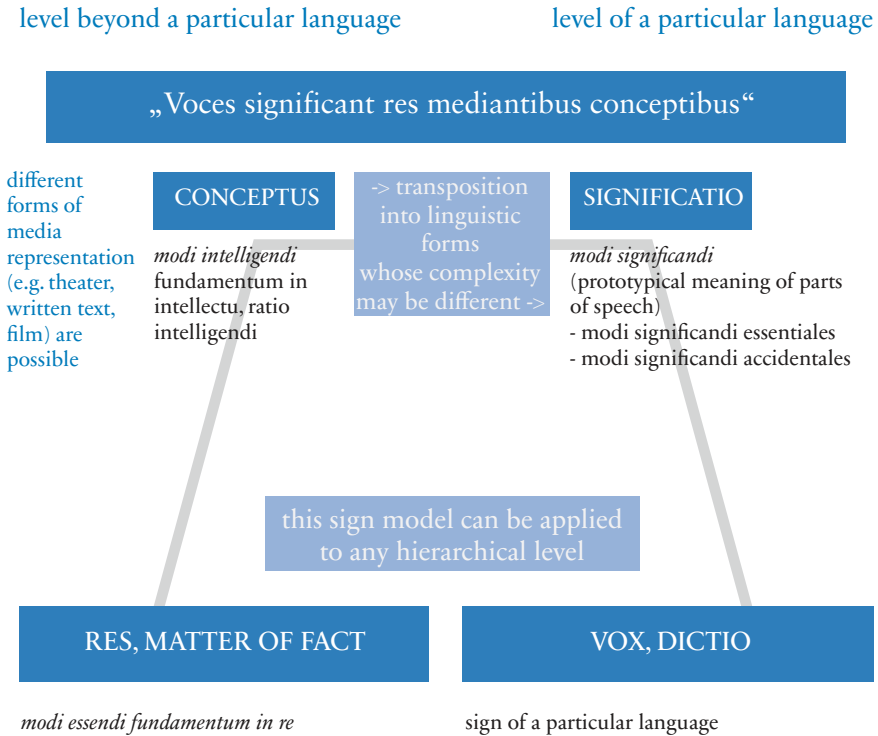


Fig. 2 The conception of the schoolmen translated into a scheme by the present author.

*headache; je souffre d'un mal de tête épouvantable; me duele terriblemente la cabeza, päätäni särkee paljon*, etc. All these expressions boil down to a series of *voces* or *dictiones*. In reverse order, from bottom right to bottom left of the model, we by now can understand a well-known scholastic dictum: *voces significant (=significatio) res mediantibus conceptibus*, or “words signify things by mediation through concepts”.

A further advantage of the model is that it can be applied to the entire hierarchy of signs: words, groups of words, clauses, sentences, paragraphs, texts. Where the term *conceptus* actually stands, we could as well find *script*, *scenario*, *macrostructure*, all the more since concepts may be represented in other media such as entire novels, films, and theatre plays.

Thus the model of the mediaeval schoolmen is most efficient: it copes with the distinction between the concept level and the word level crucial for the thinking of Roudet; it is not restricted to words alone, its dynamism allowing the integration of higher lin-

guistic units as well (I didn't insist on this point for the sake of simplicity – it has something to do with the *modi significandi accidentales* in the above scheme). It explains why we can communicate (speak and understand) in more than one language, the main issue or linchpin always being the introduction of a fourth pole, CONCEPTUS, into the above model.

### III

Now a first conclusion seems to be appropriate: metonymies and metaphors are not about words, but about concepts (the *idées* of Léonce Roudet). They are about concepts, or relations between concepts, translated into linguistic expressions. In other words, this time with George Lakoff and Mark Johnson: metaphor (and metonymy, as we shall see later) is a matter of concepts, not of words (the first of the four persistent fallacies George Lakoff and Mark Johnson mention in the afterword of the 2003 edition of their most influential book).<sup>7</sup>

With this knowledge we may return to my initial example, profiting from the somewhat enigmatic fragment of Anaxagoras I started with. I shall explain the idea of metaphors as models of thinking, with the help of a doctrine fostered by the atomists, Leucippus of Abdera and his pupil Democritus.

What was it that made these men come up with an atomistic conception of matter? Think of a bucket full of water with a small vessel in it. You move the vessel, and the water displaced at the bow will smoothly be replaced at the stern. How could this be explained? The idea they came up with was that water (and then matter in general) consists of small particles moving relative to each other thanks to the void space in between.

In a nutshell, this is expressed in the following fragment: νόμῳ γάρ φησι γλυκύ, νόμῳ πικρόν, νόμῳ θερμόν, νόμῳ ψυχρόν, νόμῳ χροίη, ἔτεῃ δὲ ἄτομα καὶ κενόν – we call something sweet, bitter, warm, cold, we speak of colour – but in reality, all is made of atoms and void.<sup>8</sup> As reported by Aristotle in his *Metaphysics*,<sup>9</sup> this insight was inspired by Greek script, i.e., the Greek alphabet: a series of letters with different

7 Lakoff and Johnson 1980 (citation from p. 244.)  
The authors had the privilege not to be burdened by a long European tradition of thinking about metaphors. This is why they start – so to speak – from scratch, conceiving of metaphors from the outset not as a matter of words, but as a matter of the concepts behind the words. Nevertheless, the European tradition would have offered similar ways, as we have seen for instance in the example of the schoolmen or an author like Léonce Roudet. The

problem is that few persons were familiar with such non-mainstream thinking, among them for example Roman Jakobson. Hans Blumenberg, even without the respective linguistic background, uses different wording to advocate a similar position (Blumenberg 1960); the problem is that his followers did not see its far-reaching implications.

8 Diels and Kranz 1960, fragment 68B 125 (Democritus).

9 *Metaphysics* A4. 985 b4 sqq.

shapes, in different combinations and in different spatial position, separated by space, thus leading to an infinite number of combinations. The basic principles holding for atoms (the atomists use special terms not necessarily familiar to laypeople), illustrated by letters, were:

Greek term of the principle	Exemplified by alphabet and script	Translation (explanation)
τάξις	AN vs. NA	order
διαθιγή	Z vs. N	position in space (rotate letter Z 90 degrees clockwise)
ῥυσμός	A vs. N	shape

The example clearly shows that in this case “τὰ phainόμενα” seen as the elements of Greek script, i.e., the concept of script and its letters, show the invisible inner structure of matter. In other words: the concept of Greek script serves as a model of thinking, showing in this case how matter should be organised.

In their use of the concept of alphabetic script as a model of thinking, the atomists were forerunners of a group of scientists whose thinking to this day is entirely dependent on this model: those in molecular biology.

Since 1953 the nucleotides, abbreviated as A, T, G, and C, are seen as the *letters of the genetic alphabet*. RNA polymerase *reads* DNA sequences within their *reading frame/s*. This process is called *transcription*, which happens because the *transcription of DNA sequences* results in *transcription factors*. The transcripts are subject to *proofreading*. The result is called a *copy*, subject to further *editing*. The resulting string of mRNA will be *translated* into a polypeptide. This is made possible because the triplets of nucleotides *encode* or *are coding for* amino acids. The whole process is called *gene expression*.

Certain recurring sequences of letters are called *motifs*. They can be boxed (whereby a box is drawn around sections of the written sequence), leading to names like *TATA box* or to the transcription factors called *homeoboxes*.<sup>10</sup>

The genomes of many species are currently being *deciphered*. The results are stored in large *databases* modelling the sequences of nucleotides as *sequences of the letters A, T, G, and C*. The same is true for *protein databases* that symbolise one amino acid with one letter (the sequence, “mgqtgkk...”, for instance, stands for methionine-glycine-glutamine-threonine-glycine-lysine-lysine...). This means that sequences of nucleotides or amino

<sup>10</sup> In the meantime, the genes containing homeoboxes are even abbreviated as *hox* genes.



acids corresponding to triplets of nucleotides ‘materialise’ – in a somewhat hybrid way – *in databases as sequences of letters*.<sup>11</sup>

Could this concept of alphabetic script serving as a fundamental model of thinking have been avoided? As a rule, biologists are not aware of the central metaphor they use. The present author tried to avoid it at the beginning of the article cited above, using instead the term ‘information’ – but this itself has a metaphoric origin with a strong Aristotelian background.<sup>12</sup> The problem that our thinking, even philosophical thinking, depends on such central, pervasive metaphors (better: concepts) was addressed by the late Hans Blumenberg in his book *Paradigmen zu einer Metaphorologie*.<sup>13</sup>

An author like Dante (familiar with the doctrines of the thirteenth-century schoolmen, by the way) is fully aware of the problems linked with such models as we gain from the visible world and apply afterwards to the invisible one – witness the idea of a ‘person’ named God:

<i>Divina Commedia</i> III ( <i>Paradiso</i> ), canto IV, 40–45 (Beatrice speaking to Dante)	English translation
Così parlar conveniesi all vostro ingegno, però che solo da sensato apprende ciò che fa poscia d’intelletto degno.	To speak thus is adapted to your mind Since only through the sense it apprehendeth What then it worthy makes of intellect.
Per questo la Scrittura condescende a vostra facultate, e piedi e mano attribuisce a Dio, e altro intende.	On this account the Scripture condescends Unto your faculties, and feet and hands To God attributes, and means something else.

Having stated in a first conclusion that metaphors (and metonymies) are about concepts, not words, this leads us to a second conclusion: metaphors are models of thinking – in the sense of our interpretation of Anaxagoras’ fragment – insofar as they allow us to grab and master, thanks to a central modelling concept, a domain which as often cannot – or cannot directly – be perceived by our senses.

11 For more information see Raible 2001.

12 Raible 2010.

13 Blumenberg 1960. Among his examples are the ‘naked truth’, Greek *a-lêtheia* (what is not hidden); think of the German ‘be-greifen’, ‘An-sicht’, ‘Stand-punkt’, etc.

IV

Let me add some further examples, this time from the Bible, of central metaphors serving as models of thinking. In *Deuteronomy* XXI we read:

<i>Deuteronomy</i> XXI. 10–14	English Standard Version
<p><sup>10</sup> si egressus fueris ad pugnam contra inimicos tuos et tradiderit eos Dominus Deus tuus in manu tua captivosque duxeris <sup>11</sup> et videris in numero captivorum mulierem pulchram et adamaveris eam voluerisque habere uxorem <sup>12</sup> introduces in domum intum tuam quae radet caesariem et circumcidet ungues <sup>13</sup> et deponet vestem in qua capta est sedensque in domo tua flebit patrem et matrem suam uno mense et postea intrabis ad eam dormiesque cum illa et erit uxor tua <sup>14</sup> sin autem postea non sederit animo tuo dimittes eam liberam nec vendere poteris pecunia nec opprimere per potentiam quia humiliasti eam.</p>	<p><sup>10</sup> “When you go out to war against your enemies, and the Lord your God gives them into your hand and you take them into your hand and you take them captive, <sup>11</sup> and you see among the captives a beautiful woman, and you desire to take her to be your wife, <sup>12</sup> and you bring her home to your house, she shall shave her head and pare her nails. <sup>13</sup> And she shall take off the clothes in which she was captured and shall remain in your house and lament her father and her mother a full month. After that you may go in to her and be her husband, and she shall be your wife. <sup>14</sup> But if you no longer delight in her, you shall let her go where she wants. But you shall not sell her for money, nor shall you treat her as a slave, since you have humiliated her.</p>

In this passage from *Deuteronomy* we would hardly recognize a metaphorical intention. But read Origen. In his *Homiliae in Leviticum* he clearly uses to the above-cited passage as a model of thinking:

Origen, <i>Homiliae in Leviticum</i> VII, PG XII, 227 [col. 490 sq.]	My translation
<p>... et ego frequenter exivi ad bellum contra inimicos meos, et vidi ibi in praeda[m] mulierem decora specie. Quaecunque enim bene et rationabiliter dicta invenimus apud inimicos nostros, si quid apud illos sapienter et scienter dictum legimus, oportet nos</p>	<p>I went out to war against my enemies, too, and I saw among the captives a beautiful woman. Since we find things well and reasonably said by our enemies, when we read something of this kind, we have to purify it from their science and to take off and cut</p>

mundare id et ab scientia quae apud illos est auferre et resecare omne quod emortuum et inane est, hoc enim sunt omnes capilli capitis et ungulae mulieris ex inimicorum spoliis assumptae, et ita demum facere eam nobis uxorem, cum jam nihil ex illis quae per infidelitatem mortua dicuntur, habuerit, nihil in capite habeat mortuum, nihil in manibus, ut neque sensibus, neque actibus, immundum aliquid, aut mortuum gerat.

back what is dead and useless – such are the hair of the head and the nails of the woman we took out of the spoils of our enemies. And we thus may take her to be our wife since she has nothing left anymore we would call dead, given their lack of faith, neither on her head nor on her hands.

In Origen's interpretation, what was said of the purification of a (female) body is now applied to the purification of pagan texts. Together with the simile of bees looking for honey, thus transforming enemy 'prey' into something new and highly welcome, this passage, cited time and again by Christian authors as the text of the beautiful slave, was most important for the preservation of texts dating from antiquity.

The purification example is at the same time a step to the fourfold sense of the Scriptures (literal, allegorical, moral or tropological, and anagogical senses), an exegetic practice developed by the Fathers of the Church: in Origen we find only three of them, with the anagogical one still lacking. The doctrine of the fourfold sense is intimately linked with metaphors as models of thinking, too. In the above case the idea (or concept) of purification (called 'allegorical' in this doctrine) is applied to a case seen as similar, the purification of pagan texts. How the doctrine of the fourfold sense of the Scriptures was developed and how it worked can be seen in a basic four-volume text written by one of the Jesuit polygraphers, Henri de Lubac (1896–1991): *Exégèse médiévale : les quatre sens de l'Écriture*.<sup>14</sup>

## V

Let me add some more examples for metaphors as models of thinking, first biblical ones, then examples drawn from the lay world. A well-known concept is the concept of Christian life as a journey. According to the *Dictionary of Biblical Imagery* we find it as the Path of Life,<sup>15</sup> Way of Salvation,<sup>16</sup> Walking with God, Virtuous Life, Followers of the Way.<sup>17</sup> Some citations from the *Dictionary*:

14 Lubac 1959–1964.

15 Mt 7:13–14.

16 E.g., Mt 3:3, Mk 1:2–3; Lk 3,4–5; Jn 1:19–25, etc.

17 Ryken, Wilhoit, and Longman 1998.

- “As always, symbolic meanings grow out of the physical phenomenon. Walking on a path involves choosing to enter on the path and to pursue it in a given direction, progress toward a destination, making wise rather than foolish choices along the way, taking care for safety and not getting lost, and arriving at a goal.”
- “The image of the path or way is pervasive in the Bible, with the references numbering approximately eight hundred.”
- “In biblical times walking was the most common way of going somewhere, even over long distances. It is not surprising, then, that references to walking in the Bible number well over two hundred (and in some versions nearly three hundred).”
- “Walking is one of the Bible’s vivid metaphors for how godly people should live, both positively in terms of what to follow, and negatively in warnings about what to avoid.”
- “Death as a metaphoric way” [Josh 23:14, 1 Kings 2:2; Ps. 121:7–8] “The image of the path or way embodies a profound reflection on fundamental ethical themes, the conduct of God and humanity, and the character of God’s salvation.”

The importance of this concept is so great that the technique used by Origen as regards the beautiful slave from *Deuteronomy* can be applied, among other things, to the works of Homer, especially to the *Odyssey* and to Ulysses’ journey home after the fall of Troy. Hugo Rahner published a book in 1966 (first edition: 1957) with the title *Griechische Mythen in christlicher Deutung* (Greek myths in Christian interpretation). It includes a large chapter titled “Holy Homer”.<sup>18</sup> In a book by the same author, published in 1964, we find a large part (of about 300 pages) under the heading ‘Antenna Crucis’. Its chapter titles are self-explanatory: “I Odysseus am Mastbaum” (mast seen as cross, temptation by the sirens); “II Das Meer der Welt”; “III Das Schiff aus Holz”; “IV Das Kreuz als Mastbaum und Antenne” (the cross as mast and yard); “V Das mystische Tau” (means the Greek letter T); “VI Der Schiffbruch und die Planke des Heils” (plank, strake of salvation); “VII Das Schiff des Heils”; “IX Die Ankunft im Hafen. Schifflein des Petrus. Zur Symbolgeschichte des römischen Prinzipats”; “VIII Die Arche Noah als Schiff des Heils”; “IX Die Ankunft im Hafen”.<sup>19</sup>

The concept of the journey is not restricted to Christian contexts. You will find it in everyday contexts and everyday thinking – as is shown for instance by George Lakoff and Mark Johnson in their 1999 book: a purposeful life is a “journey”; a person living a

18 Rahner n.d.

19 Rahner 1964. Some years later, Hans Blumenberg published his book on the importance of the concept of ‘shipwreck’: Blumenberg 1979. By the way,

Hugo Rahner’s brother, Karl Rahner, held a chair from 1967 to 1971 at the University of Münster, where Blumenberg taught from 1970 to 1985.)

life is a “traveller”; life goals are “destinations”; a life plan is an “itinerary,” etc.<sup>20</sup> Another quite interesting concept is the idea of love as war. Classical scholars will remember first of all the *Ars amatoria* of Ovid, especially book I, ix: *militat omnis amans*: love is war – females are fortresses to be besieged – lovers should be young and strong (*senilis amor* is ridiculous) – lovers have to endure everything (sleep on the ground in front of the house, etc.) – the rival is an enemy;

*custodum transire manus vigilumque catervas  
militis et miseri semper amantis opus.*

Getting past watchman’s hands, and enemy sentinels  
is work for soldiers and wretched lovers.

In this context, all of us can remember works from world literature – as for instance Stendhal’s *Le rouge et le noir* or the *Memoirs* of Giacomo Casanova.

It was a pleasant surprise for me to find the same concept of ‘love as war’ in Lakoff/Johnson 1980. What is new in modern times is the two-sidedness of this war: women fight as well – we tend to call it ‘gender equality’. Witness the following statements: *he* is known for his rapid *conquests*; *she fought* for him, but his mistress *won out*; *he fled* from her advances; *she pursued* him relentlessly; *he* is slowly *gaining ground* with her; *he won her hand* in marriage; *he overpowered* her; *she is besieged* by suitors; *he* has to *fend them off*; *he enlisted the aid* of her friends; *he made an ally* of her mother; theirs is a *misalliance* if I’ve ever seen one.<sup>21</sup>

## VI

Let me briefly mention two further models of thinking. One of the most important inventions of mankind was the invention of script – we already saw one of its effects in the form of the concept behind the atomistic theory of Leucippus and Democritus, and behind the approach molecular biologists have towards their subject matter. Now script produces texts we can read in books. Thus the book as a model for the world (going back to Augustine) became a most influential concept, the so-called Book of Nature. God is thought of as its author. We try to read this book, and since Galileo it has been written in cipher, with mathematical symbols (reflecting the development of mathematics as the most important ancillary science for natural sciences in the seventeenth century.) The history of this concept and its pervasive effect have been described by Hans Blumenberg in another of his influential texts: *Die Lesbarkeit der Welt*.<sup>22</sup>

20 Lakoff and Johnson 1999.

22 Blumenberg 1981.

21 Lakoff and Johnson 1980, 49.

The second concept is the world (or universe) as a clockwork (*horologium*), inspired by the large astronomical clocks constructed in the sixteenth and seventeenth centuries. On the one hand, the world as a clockwork could be interpreted in a deistic perspective, making of God the “grand [or even supreme] horologer”, the big or universal watchmaker. This remains true of Leibniz (1646–1716). On the other hand there was a ‘physical’, far more progressive interpretation of the concept, fostered, e.g., by Johannes Kepler (1571–1630).<sup>23</sup> Judge for yourself:

Latin original	My translation
Multus sum in causis physicis indagandis. Scopus meus hic est, ut coelestem machinam dicam non esse instar divini animalis, sed instar horologii (qui horologium credit esse animatum, is gloriam artificis tribuit operi), ut in qua pene omnis motuum varietas ab una simplicissima vi magnetica corporali, uti in horologio motus omnes a simplicissimo pondere.	I am very busy looking for the physical causes. Here my goal is to show that the heavenly machinery is not an image of a divine being, but the image of a clockwork (if someone believes the clockwork to be animated, then he attributes the merit of the watchmaker to the clockwork itself), and to show that nearly all variation of the movements comes from one very simple magnetic force of the heavenly bodies; as in a clockwork, all movements come from a very simple weight.

VII

It stands to reason that such central concepts or models of thinking can be subject to change according to the world in which we live. The concept of the world as a clockwork has had its day. It was replaced by the concept of the network, in which no one is forced to look for a moving force, e.g., an unmoved mover. In the case of ‘love as war’, it was more or less an adaptation to the present style of life, the basic state of affairs remaining identical. In other cases, models of thinking become obsolete and need more explanation today.

23 Kepler in a letter to Herwart von Hohenburg. Cf. *Joannis Kepleri astronomi opera omnia*. Frankfurti

a. M./Erlangae 1859. For the context I refer to the great historian of science, Koyré 1961, 377 sq.

Let me take one further, highly interesting example. Everyone is familiar with the passage from Goethe's *Faust* where Faust prepares a scholar for his studies ("Schülerszene"). Here the central concept is 'thinking is weaving':

Passage from the 'Schülerszene'	English translation (italics mine)
Gebraucht der Zeit, sie geht so schnell von hinnen,	Use your time well: it slips away so fast, yet
Doch Ordnung lehrt Euch Zeit gewinnen.	Discipline will teach you how to win it.
Mein teurer Freund, ich rat Euch drum	My dear friend, I'd advise, in sum,
Zuerst Collegium Logicum.	First, the Collegium Logicum.
Da wird der Geist Euch wohl dressiert,	There your mind will be trained,
In spanische Stiefeln eingeschnürt,	As if in Spanish boots, constrained,
Daß er bedächtiger so fortan	So that painfully, as it ought,
Hinschleiche die Gedankenbahn,	It creeps along the way of thought,
Und nicht etwa, die Kreuz und Quer,	Not flitting about all over,
Irrlichteliere hin und her.	Wandering here and there.
Dann lehret man Euch manchen Tag,	So you'll learn, in many days,
Daß, was Ihr sonst auf einen Schlag	What you used to do, untaught, as in a haze,
Getrieben, wie Essen und Trinken frei,	Like eating now, and drinking, you'll see
Eins! Zwei! Drei! dazu nötig sei.	The necessity of One! Two! Three!
Zwar ist's mit der Gedankenfabrik	<i>Truly the intricacy of logic</i>
Wie mit einem Weber-Meisterstück,	<i>Is like a master-weaver's fabric,</i>
Wo ein Tritt tausend Fäden regt,	<i>Where the loom holds a thousand threads,</i>
Die Schiffelein herüber hinüber schießen,	<i>Here and there the shuttles go</i>
Die Fäden ungesehen fließen,	<i>And the threads, invisibly, flow,</i>
Ein Schlag tausend Verbindungen schlägt.	<i>One pass serves for a thousand instead.</i>
Der Philosoph, der tritt herein	Then the philosopher steps in: he'll show
Und beweist Euch, es müßt so sein:	That it certainly had to be so:
Das Erst wär so, das Zweite so,	The first was – so, the second – so,
Und drum das Dritt und Vierte so;	And so, the third and fourth were – so:
Und wenn das Erst und Zweit nicht wär,	If first and second had never been,
Das Dritt und Viert wär nimmermehr.	Third and fourth would not be seen.
Das preisen die Schüler allerorten,	<i>All praise the scholars, beyond believing,</i>
Sind aber keine Weber geworden.	<i>But few of them ever turn to weaving.</i>

Where does this appreciation for the loom and the activity of weavers come from? Mechanical looms were introduced during the eighteenth century, contributing essentially to the so-called Industrial Revolution. For the previous few centuries, and until the beginning of the nineteenth, men of standing had worn stockings. And one particular loom was invented for the production of such stockings. This “métier à faire des bas”, a very sophisticated machine, was then seen as the summit of technical know-how. One of the longest articles of the *Grande Encyclopédie* was dedicated to exactly this machine. It was written by Diderot himself, who had spent about three months learning its function and how to perfectly operate this kind of loom. What made it worth the effort for him and some of his contemporaries was that this loom represented nothing less than the essence of thinking:

Citation from the <i>Encyclopédie</i> , article BAS (stocking)	My translation (italics mine)
Le métier à faire des bas est une des machines les plus compliquées & les plus conséquentes que nous ayons : on peut la regarder comme un seul & unique raisonnement, dont la fabrication de l'ouvrage est la conclusion ; aussi regne-t-il entre ses parties une si grande dépendance, qu'en retrancher une seule, ou altérer la forme de celles qu'on juge les moins importantes, c'est nuire à tout le mécanisme. <sup>24</sup>	The loom for stockings is one of the most complex and consequent machines we possess: you can see it as <i>one single reasoning process, leading to the product as its conclusion</i> . This is why there exists such a degree of mutual dependency among its parts that taking away a single one or changing the form of those we regard as less important is detrimental to the entire mechanism.

The importance in contemporary technology of the use of metaphors, viz. the underlying concepts, has been aptly described by Karlheinz Jakob. The eighteenth century was indeed a century of machines.<sup>25</sup>

VIII

In order to conclude (and for the sake of a comprehensive view of the matter), let me add some hints as to the influence of concepts on our language itself. The reader will

24 Passage from the beginning of the article BAS (stocking), second volume of the first edition of the *Encyclopédie ou dictionnaire raisonné des sciences, des arts et des métiers*, dating from 1751. The orthography

25 Jakob 1991.

is authentic. Jacques Proust, an expert on Diderot, dedicated an extensive paper to this article from the *Encyclopédie*: Proust 1977.



remember that this was the problem Roudet wanted to explain. A first point has to do with one of the themes popularised by Lakoff and Johnson:<sup>26</sup> body concepts are central in the vocabulary and the grammar of individual languages. This was one of the topics of research of the late Peter Koch, whose projected and partly realised *Dictionnaire Étymologique et Cognitif des Langues Romanes* (DECOLAR) treats exactly the topic of body parts and their semantic evolution. The Latin *caput* (head) has for instance undergone a semantic change to ‘le chef’ in French, ‘the chief’ in English. This corresponds to semantic similarity of the concepts, whereas it would be contiguity in the case of Latin *coxa* (hip) → French *cuisse* (thigh). Koch and his collaborator Paul Gévaudan give many quite sophisticated examples of a refined, linguistic version of Roudet’s findings, this time including even the level of words (which I naturally was not interested in) and not only the level of ideas/concepts.<sup>27</sup> The second point is that grammaticalisation processes very often start from body concepts, too. Take the notion of the self (ego) – it may be derived, e.g., from the concepts of ‘head’, ‘belly’, ‘body’. This topic has found greatest interest among linguists. Bernd Heine, a scholar with a broad view not subject to any Eurocentric bias (since he is a specialist in African languages) has been particularly engaged in this discussion.<sup>28</sup>

An example from my own experience with Romance and Creole languages is perhaps at issue. All of us have a concept of action. Actions have a beginning, a middle phase and an end. Additionally, all of us can imagine a phase before the onset of an action and a phase after its end. Now, what can be conceived can be linguistically expressed, too. In particular, the phase before the onset and the phase after the end of an action are the sources of continuous efforts leading to new forms: the expressions for the pre-initial phase tend to become new future forms (‘I am going to swim’, ‘I will swim’, French ‘je vais nager’, etc.). On a global scale, there exist perhaps only five types of expressions for this phase. The Latin one was deontic (‘I have to sing’, *cantare habeo*, source of nearly all Romance synthetic future forms). The expressions for the post-terminal phase tend to become new perfective and then perfect forms (think of Latin *habeo cantatum*, ‘I have finished singing’, source of the Romance perfect forms like French ‘j’ai chanté’).<sup>29</sup>

26 Lakoff and Johnson 1999.

27 Gévaudan and Koch 2010.

28 Heine, Claudi, and Hünemeyer 1991; Heine and Kuteva 2002; Heine and Kuteva 2007.

29 Cf. for instance Raible 2003.

## IX

Let me terminate these considerations with some conclusions.

- (1) As was already shown by phenomenology and Gestalt psychology (decidedly theories of perception), some basic operations exist in our mind: the most important ones utilise recognition on the basis of the relations of contiguity and similarity. In the case of metaphors, these relations are not given per se, but created by ourselves.
- (2) These operations work from concepts, not from their linguistic counterparts (the words or sentences).
- (3) Thus metaphor and metonymy are a matter of concepts, not of words (the first of the four persistent fallacies Lakoff/Johnson 1980 mention in their afterword of 2003).<sup>30</sup>
- (4) A concept applied to another conceptual space creates either contiguity (and thus metonymy) or similarity (and thus metaphor). This was the second, far more interesting interpretation of Anaxagoras' fragment.
- (5) In order to become fully aware of this fact, one has to change one's sign model. The appropriate one is, e.g., the one fostered by the schoolmen of the thirteenth century, certainly not the misleading one of Ogden and Richards.
- (6) Our reasoning is of necessity metaphoric or metonymic – the number of states of affairs or objects to be designed being unlimited, whereas the vocabulary of historical languages is always restricted. This leads to polysemy as a natural consequence – the meaning of words thus depending on the context in which they are uttered. (Think, as a simple example, of the *Trash* icon on your computer or of a lover *besieging* his lady.) This kind of meaning change was exactly the point made by Léonce Roudet.

In order to show that all this works just as well for the contiguity of concepts, I will end with an extra: a series of metonymies we all are familiar with.

30 "The first fallacy is that metaphor is a matter of words, not concepts. The second is that metaphor is based on similarity. The third is that all concepts are literal and that none can be metaphorical. The

fourth is that rational thought is in no way shaped by the nature of our brains and bodies." (Lakoff and Johnson 1980, 244).

X

We are familiar with taboo domains and activities in our everyday life. We are not allowed to speak of such matters of fact directly – lots of examples can be found today in the domain of so-called political correctness. Now one of the vices of modern Western societies is alcoholism. When speaking of someone's relative drunkenness, beware of naming it as such. Never tell someone that s/he is intoxicated. Most expressions relating to taboos resort to contiguous activities or states. In the case of alcoholism, there is a quite large quantity of such solutions. A considerable part of the following expressions comes, by the way, from the *Dogood Papers* of Benjamin Franklin (Paper No 12, 10. IX.1722).<sup>31</sup>

Contiguous concept	Expressions for a taboo activity
	Contiguity between concepts (→ Metonymy) (Mostly) metonymical expressions
Relaxed mood	Merry, mellow, flying high, high, pretty well-entered (Germ. aufgeräumt), to be in one's altitudes
Positive effects, preparation for the 'hard' life	To tie one on, to take one for the road, nightcap, the cup that cheers; shots, jolts an eye-opener, a pick-me-up
To straighten up oneself	To refresh the inner man, to repair the tissues, to wet the whistle
Reduced perceptive faculty	Fuddled, see two moons, the sun has shown upon him, blind, cockeyed, conked, feeling no pain, jagged, pie-eyed, seeing double
Reduced speaking faculty	To clip the King's English (Germ. e.g., eine schwere Zunge haben)

31 "And as the Effects of Liquor are various, so are the Characters given to its Devourers. It argues some Shame in the Drunkards themselves, in that they have invented numberless Words and Phrases to cover their Folly, whose proper Significations are harmless, or have no Signification at all. They are seldom known to be *drunk*, tho' they are very often *boozey*, *cogey*, *tipsey*, *fox'd*, *merry*, *mellow*, *fuddl'd*, *groat-able*, *Confoundedly cut*, *See two Moons*, *are Among the Philistines*, *In a very good Humour*, *See the Sun*, or, *The*

*Sun has shone upon them; they Clip the King's English*, *are Almost froze*, *Feavourish*, *In their Altitudes*, *Pretty well enter'd*, &c. In short, every Day produces some new Word or Phrase which might be added to the Vocabulary of the *Tiplers*: But I have chosen to mention these few, because if at any Time a Man of Sobriety and Temperance happens to *cut himself confoundedly*, or is *almost froze*, or *feavourish*, or accidentally *sees the Sun*, &c. he may escape the Imputation of being *drunk*, when his Misfortune comes to be related."

Reduced mobility	To be almost frozen, groggy, half shot, paralyzed, palsied, petrified, plastered, shellacked, skunked, smashed, stiff
Reduced equilibrium control	To be listing to the leeward, squiffed, three sheets to the wind
Reduced accessibility	To be corked, tight (Germ. jemand ist völlig zu)
To be full of liquid	To be blotto, floating, greased, juiced, loaded, saturated, tanked, spizzled, having a drop too much,
Concomitant activity of the body	To hoist a few, to bend the elbow with one's cronies, to have some nips, swigs, slugs, to have a slug, to have a snootful, (cf. Germ. sich einen hinter die Binde gießen)
State after the event	To have a katzenjammer, hangover, the horrors, a big head, a bit of a glow on, to be blasted, boiled, fried, gassed, stewed, stoned, under the influence
Belittlement of the quantity	To take a quick one, to need a wee dram before dinner (Germ. ein Bierchen trinken)
Pub crawls	To be on a bender, on a spree, on a toot
Other names of alcohol	Booze, hooch, sauce, snake oil, the grape, redevye, a drop too much

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Thus metaphors and metonymies are central notions, reflecting, among other things, the way we perceive, think and speak, be it as commoners or as scientists; in short: how we cope with the world around us.

# Bibliography

## Blumenberg 1960

Hans Blumenberg. "Paradigmen zu einer Metaphorologie". *Archiv für Begriffsgeschichte* 6 (1960), 7–142.

## Blumenberg 1979

Hans Blumenberg. *Schiffbruch mit Zuschauer. Paradigma einer Daseinsmetapher*. Frankfurt a. M.: Suhrkamp, 1979.

## Blumenberg 1981

Hans Blumenberg. *Die Lesbarkeit der Welt*. Frankfurt a. M.: Suhrkamp, 1981.

## Diels and Kranz 1960

Hermann Diels and Walther Kranz, eds. *Die Fragmente der Vorsokratiker*. Vol. 2. Berlin: Weidmann, 1960.

## Diller 1932

Hans Diller. "ὄψεις ἀδήλων τὰ φαινόμενα". *Hermes* 37 (1932), 14–42.

## Diller 1971

Hans Diller. *Kleine Schriften zur antiken Literatur*. München: C. H. Beck, 1971.

## Gévaudan and Koch 2010

Paul Gévaudan and Peter Koch. "Sémantique Cognitive et Changement Lexical". In *Grandes voies et chemins de traverse de la sémantique cognitive. Journée scientifique de la Société de Linguistique de Paris*. Ed. by P. Gévaudan and P. Koch. Mémoires de la Société de Linguistique de Paris 18. Leuven: Peeters, 2010, 103–146.

## Heine, Claudi, and Hünemeyer 1991

Bernd Heine, Ulrike Claudi, and Friederike Hünemeyer. *Grammaticalization. A Conceptual Framework*. Chicago: University of Chicago Press, 1991.

## Heine and Kuteva 2002

Bernd Heine and Tania Kuteva. *World Lexicon of Grammaticalization*. Cambridge: Cambridge University Press, 2002.

## Heine and Kuteva 2007

Bernd Heine and Tania Kuteva. *The Genesis of Grammar. A Reconstruction*. Studies in the Evolution of Language 9. Oxford: Oxford University Press, 2007.

## Jakob 1991

Karlheinz Jakob. *Maschine, mentales Modell, Metapher. Studien zur Semantik und Geschichte der Techniksprache*. Tübingen: Max Niemeyer, 1991.

## Jakobson 1956

Roman Jakobson. *Fundamentals of Language*. The Hague and Paris: Mouton, 1956.

## Jakobson 1971

Roman Jakobson. *Selected Writings*. Bd. 2: *Word and Language*. The Hague and Paris: Mouton, 1971.

## Koyré 1961

Alexandre Koyré. *La révolution astronomique. Copernic, Kepler, Borelli*. Histoire de la pensée 3. Paris: Hermann, 1961.

## Lakoff and Johnson 1980

George Lakoff and Mark Johnson. *Metaphors We Live By*. Chicago: University of Chicago Press, 1980.

## Lakoff and Johnson 1999

George Lakoff and Mark Johnson. *Philosophy in the Flesh. The Embodied Mind and Its Challenges to Western Thought*. New York: Basic Books, 1999.

## Lubac 1959–1964

Henri de Lubac. *Exégèse médiévale: les quatre sens de l'écriture*. Paris: Aubier, 1959–1964.

## Ogden and Richards 1923

Charles Kay Ogden and Ivor Armstrong Richards. *The Meaning of Meaning: a Study of the Influence of Language upon Thought and of the Science of Symbolism*. London: Kegan Paul, Trench, Trubner & Co., 1923.

**Proust 1977**

Jacques Proust. "L'article bas de Diderot". In *Langues et langages de Leibniz à l'Encyclopédie*. Ed. by M. Duchet and M. Jalley. Paris: collection 10/18, 1977, 245–278.

**Rahner n.d.**

Hugo Rahner. *Griechische Mythen in christlicher Deutung*. Darmstadt: Wissenschaftliche Buchgesellschaft.

**Rahner 1964**

Hugo Rahner. *Symbole der Kirche. Die Ekklesiologie der Väter*. Salzburg: Otto Müller, 1964.

**Raible 1983**

Wolfgang Raible. "Zur Einleitung". In *Zur Semantik des Französischen*. Ed. by H. Stimm and W. Raible. Beihefte zur Zeitschrift für französische Sprache und Literatur 9. Wiesbaden: Steiner, 1983, 1–24.

**Raible 1987**

Wolfgang Raible. "Comment intégrer la syntaxe dans la sémantique? La solution des grammairiens scolastiques". In „*Romantias ingeniosa*“. *Festschrift für Prof. Dr. Gerold Hilty zum 60. Geburtstag*. Ed. by G. Lüdi, H. Stricker, and J. Wüest. Bern, Frankfurt a. M., and New York [u.a.]: Peter Lang, 1987, 497–510.

**Raible 2001**

Wolfgang Raible. "Linguistics and Genetics: Systematic Parallels". In *Language Typology and Language Universals. An International Handbook*. Ed. by M. Haspelmath, E. König, W. Oesterreicher, and W. Raible. Handbücher zur Sprach- und Kommunikationswissenschaft 20.1. Berlin and New York: De Gruyter, 2001, 103–123.

**Raible 2003**

Wolfgang Raible. "Bioprogramme et grammaticalisation". In *Grammaticalisation et réanalyse. Approches de la variation créole et française*. Ed. by S. Kriegel. Paris: CNRS Éditions, 2003, 143–161.

**Raible 2010**

Wolfgang Raible. *Information. Ein Schlüsselbegriff für Natur- und Kulturwissenschaften*. Heidelberg: Jahrbuch der Heidelberger Akademie der Wissenschaften: Selbstverlag, 2010, 382–389.

**Roudet 1921**

Léonce Roudet. "Sur la classification psychologique des changements sémantiques". *Journal de Psychologie* 18 (1921), 676–692.

**Ryken, Wilhoit, and Longman 1998**

Leland Ryken, Jim Wilhoit, and Tremper Longman, eds. *Dictionary of Biblical Imagery*. Downers Grove, Ill.: InterVarsity Press, 1998.

## Illustration credits

- 1 According to Ogden and Richards 1923.
- 2 Wolfgang Raible.

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